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RELIGIOUS CORRELATES OF SCHOOL EXPENDITURES.

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THE HYPOTHESIS THAT PUBLIC EDUCATIONAL EXPENDITURES ARE RELATED TO THE RELIGIOUS COMPOSITION OF A COMMUNITY WAS TESTED STATISTICALLY. EIGHTEEN RANDOMLY SELECTED SAN FRANCISCO BAY AREA SCHOOL DISTRICTS FROM A TOTAL OF 130 HAVING MORE THAN 300 PUPILS IN ADA WERE USED FOR THE STUDY. QUESTIONNAIRES ON RELIGIOUS PREFERENCES WERE SENT TO 50 RANDOMLY SELECTED VOTERS IN EACH DISTRICT. NINETY-ONE PERCENT USABLE RESPONSES WERE RECORDED. THE DATA WERE EVALUATED BY A MULTIPLE REGRESSION ANALYSIS AND TESTED FOR SIGNIFICANCE BY USING A "T" TEST. A MULTIPLE CORRELATION COEFFICIENT PROVIDED A MEASURE OF THE USEFULNESS OF THE REGRESSION EQUATION FOR PREDICTING THE CRITERION VARIABLE. INDEPENDENT VARIABLES FOUND TO BE MOST RELATED TO EDUCATIONAL EXPENDITURES WERE THE PERCENTAGE (IN THE COMMUNITY) OF (1) CATHOLIC, (2) PROTESTANT-NURTURE, (3) PROTESTANT-CONVERSION, AND (4) MISCELLANEOUS. THIS STUDY MAKES FOUR CONTRIBUTIONS TO THE UNDERSTANDING OF DETERMINANTS OF SCHOOL EXPENDITURES--(1) UTILIZATION OF A VARIABLE NOT PREVIOUSLY EXAMINED, (2) EMPLOYMENT OF A METHOD OF DATA COLLECTION USEFUL FOR FUTURE STUDIES, (3) CATEGORIZATION OF RELIGIOUS DENOMINATIONS INTO VARIABLES WHICH CAN BE EXAMINED STATISTICALLY, AND (4) INITIAL STATISTICAL EXAMINATION OF THESE VARIABLES. THIS PAPER WAS PREPARED FOR THE AMERICAN EDUCATIONAL RESEARCH ASSOCIATION (CHICAGO, FEBRUARY 11, 1965). (HW)

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1. Introduction

The pervasive effect of religion in society has long been noted. Shortly after the turn of the twentieth century the French sociologist Emile Durkheim pointed out that religion is an integral part of a stable society and that it embodies "in symbolic form some of the most profound insights of men" (Lenski, 1963:4). At about the same time, Max Weber (1958) argued that the characteristics of the spirit of Capitalism found their base in Protestantism. Thus, he was maintaining the place of religious determinism as a force in social maintenance and change.

The question of the relevance of the theory of religious determinism to a fully developed modern capitalistic society might well be raised at this point. Are the religious groups of America still the carriers of a distinctive economic ethic as Weber suggests was the case in post-Reformation Europe? Lenski (1963:7) maintains that the basic theoretical position is as applicable in our present day society as it was in Weber's time. Lenski's research in Detroit provides evidence of the applicability of two of Weber's basic postulates: (1) the assumption that all religious groups develop distinctive orientations toward life (Weber, 1958:13-17) and (2) the feeling that these orientations are independent of socio-economic position of the group (Gerth and Mills, 1946:269-270). The question of

interest is whether values implicit within the religious framework of belief, custom, and practice and the apparent ethnic residues within religions provide differences in educational aspirations as reflected in expenditures for public education.

2. The Study

This study reflects the common concern among students of school finance that adequate funds be made available to operate the public schools. It seeks to extend understanding of the factors that determine local expenditure for schools, in order to assess the actions necessary to compensate for local deficiencies where they exist.

The conceptual framework for this study is provided by the work of James et al. (1963) which postulates three conditions essential to public support of schools in our kind of market-oriented society. The first of these is fiscal ability to support educational programs. The second is the presence of a set of educational expectations sufficiently widespread to generate a demand for educational services. The third is the governmental system that allows an accurate expression of the demand for education and access to the resources available.

Religious affiliation is postulated as one of the conditions that is associated with demand for public educational services. Within the demand factor, this study sought to examine the relationship between the religious compositions of school districts and a measure of financial resources provided to the districts, while recognizing that there are other influences on educational aspirations.

The effect of the governmental-institutional mechanism was minimized by:

(1) Selecting all districts from the same state, thereby assuring

that districts of equal ability receive the same treatment under the state support program.

(2) Limiting the study to elementary school districts in the same geographic region in order to counteract partially the factors relating to cost differentials in school operation and to the scope of services provided.

(3) Selecting in the sample only those districts which have an Average Daily Attendance (A.D.A.) equal to or greater than 300 students in order to reduce the effects of factors relating to scale, or size of the district.

The effect of the ability factor was minimized in a subsequent examination by the inclusion of the per pupil equalized assessed valuation of each of the districts as a measure of financial ability.

3. Research Design

The major hypothesis of the study was that public educational expenditures are related to the religious composition of a community. To achieve the purposes of the study, simple models were devised consisting of sets of postulated linear relationships between each of the independent variables held constant, to determine whether the relationships were significant.

(A) The Exploratory Model. A linear relationship was hypothesized between the percent of the Catholics, the percent of the "Protestant-Nurture," the percent of the "Protestant-Borderline," and the percent of the "Protestant-Conversion" groups registered as voters in a school district and the "Total current expense per student in Average Daily Attendance" in

that district. Expressed algebraically the relationship is

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \varepsilon$$

where

Y = Total current expenditures per ADA;

x_1 = Percent Catholic;

x_2 = Percent Protestant-Nurture;

x_3 = Percent Protestant-Borderline;

x_4 = Percent Protestant-Conversion; and

β_i = the coefficients which produce the "line of best fit" for the data.

ε is normally distributed with mean "zero" and variance σ^2 (ε is $N(0, \sigma^2)$). Sample size was 18 school districts.

(B) The Alternate Exploratory Models. Four alternate exploratory models were formed by deleting the independent variable that contributed the least to the multiple R. The form of these equations was similar to the above model with x_3 (the deleted variable) successively replaced by each of four variables which were included in the miscellaneous religion category. The replaced variables were:

x_5 = percent Jewish;

x_6 = percent Buddhist;

x_7 = percent Mormon;

x_8 = percent "no religion."

(C) The General Model. A general theoretical model was formed by selecting the exploratory or alternate exploratory model which yielded the highest multiple R (Alternate number 1--percent Jewish) and including the equalized valuation as the fifth independent variable. The inclusion of this variable provided an indication of the effect of the four variables of religion when the ability factor was removed.

4. Methodology

Eighteen school districts were randomly selected from among 130 San Francisco Bay Area elementary school districts having more than 300 pupils in Average Daily Attendance. Within each district a random sample of 50 voters was selected. This sample was drawn from the official voter registration list of the district for the School Trustee's election of April, 1963.

Data on religious identification were obtained from a questionnaire mailed to the randomly selected population. On the spot interviews were used as a follow-up technique and repeated phone calls and home visits resulted in a total response of 94.1 percent, of which approximately 91 percent was useable.

The number of Protestant groups was so large that they could not have been considered individually because of loss of the statistical degrees of freedom required in the multiple regression equation. Thus, for the purpose of this study, the Protestant groups were categorized into three subsets as follows: (1) Protestant-Nurture, (2) Protestant-Borderline and (3) Protestant-Conversion. This trichotomy was based on theological and historical considerations and was developed in discussions with Professor Edwin Good of the Curriculum in Religious Studies of Stanford University. The major criterion for the evaluation was the relative emphasis of Protestant deonominations on the nurture and Christian education of children from birth as opposed to avowed conversion by adults (Table 1).

5. Statistical Analysis

Data were analyzed by multiple regression techniques. The regression

TABLE 1

Categorization of Religious Groups in the Sample

Catholic

Protestant-Nurture

Baptist--American
Community
Congregational
Dutch Reformed
Episcopal
Lutheran
Methodist
Presbyterian
Unitarian

Protestant-Borderline

Baptist--Convervative, Southern
Christian Reformed
Church of Christ
Covenant
Disciples
Luthern-Missouri Synod

Protestant-Conversion

Apostolic
Assembly of God
Brethren
Missionary Baptist
Nazarene
Pentacostal
7th Day Adventists

Miscellaneous

*Buddhist
Christian Science
*Jewish
*Mormon
*No Religion
No Response
Non-Useable Response
Orthodox-Greek, Russian
Protestant-Nondenominational
Unity

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* Examined as separate variables in the alternate models.

coefficients of each of the variables were determined and postulated relationships between the dependent and each of the independent variables were tested for significance by using a "t" test. Acceptance of hypotheses was at the very generous level of p = .20. A final statistic computed was the multiple correlation coefficient. This provided a measure of the usefulness of the regression equation for predicting the criterion variable.

6. The Findings

(A) Multiple Correlations. A multiple R of .61 was found in the Exploratory model. Multiple R values in each of the Alternate Exploratory Models formed by the deletion - replacement sequence were higher. Alternate model 1, which utilized "percent Jewish" as the replacement variable, had the largest multiple correlation with a value of .68. The inclusion of the equalized valuation to form the General Model raised the multiple R to .83. The hypothesis of this study--that public educational expenditures are related to the religious composition of communities--is confirmed. That is, the models utilized will be tentatively accepted and considered for inclusion in a broader theoretical model.

(B) The Independent Variables (hypothesized relationship in parentheses).

Variable No. 1 -- Percent Catholic (Null*, +**) The relationship is positive and the Null hypothesis is rejected in the exploratory models. In two equations the variable is significant at p = .10 and in three others the significance is at p = .20. In the general model the positive hypothesis is accepted with significance at p = .20.

Variable No. 2 -- Percent Protestant-Nurture (+) This hypothesis is accepted, with the regression coefficients significant in all five exploratory

* Exploratory Models (5)
** General Model

equations. However, the variable is not significant in the general model.

Variable No. 4 -- Percent Protestant-Conversion (-) This has proved to be one of the most useful of the variables. A negative regression coefficient of large magnitude is found in all of the exploratory equations. The relationship was significant in all five equations, with significance at p = .10 in four of the models. The variable was also significant at p = .10 in the general model. The hypothesis is accepted.

Variable No. 5 -- Percent Jewish (+) The regression coefficient of 9.64 associated with this variable was the largest found in any of the five exploratory equations. This was significant at p = .10. However, when the equalized valuation is included in the general model, this variable just fails to achieve significance.

7. The Conclusions

This study offers four contributions to current efforts to understand the determinants of school expenditures. They are: (1) utilizing a variable which had previously not been examined; (2) employing a method of data collection which may offer promise for future study of the determinants of educational expenditures; (3) categorizing religious denominations into variables which can be examined statistically; (4) performing an intitial statistical examination of these variables. The results of the analyses suggest that the variables on religion identified in this study are of sufficient importance that they ought to be considered for inclusion in future studies.

The difference among the regression coefficients of the three groups support the treatment of Protestants by subgroups. To treat differences between Catholic and Protestants on any dimension of community activities,

differences among Protestants need to be taken into account. Treating shadings of Protestantism as a group composed of three sub-classes appears to be useful.

One of the findings considered significant was that the regression coefficient for the Catholic group appears consistently positive throughout all the equations. A conclusion may be drawn from this finding as it relates to Catholic populations in suburban areas such as those included in this study. Thus, it would seem that the increased availability of funds per pupil in Average Daily Attendance in the public schools resulting from a withdrawal of children from public schools is a factor that far outweighs the importance of a possible lack of support for public education on the part of those who seek to educate their children privately.

Recognition is made of the justifiable argument that the relationships between socio-economic characteristics and religious affiliation may account for a portion of the variation in public school expenditures. It is with due regard for these and other factors, that care has been taken to avoid implying that religious identification is the major determinant of school expenditures. Conversely, by the same token, numerous studies utilizing socio-economic characteristics as independent variables may do well to consider the effects of religion on these variables.

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